



~3529537.txt
SEQUENCE LISTING

> Stratagene

<120> Renilla Reniformis Green Fluorescent Protein and Mutants Thereof

<130> 25436/1162

<140> US 09/795,040

<141> 2001-02-26

<150> US 60/185,589

<151> 2000-02-28

<150> 60/210,561

<151> 2000-06-09

<160> 8

<170> PatentIn version 3.0

<210> 1

<211> 720

<212> DNA

<213> Renilla reniformis

<220>

<221> exon

<222> (1)..(720)

<223> open reading frame

<400> 1

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tcg ttt aaa gtg aat ctg gaa ggt gta gta aac aat cat gtg ttc aca Ser Phe Lys Val Asn Leu Glu Gly Val Val Asn Asn His Val Phe Thr 20 25 30	96
atg gaa ggt tgt gga aaa gga aat att tta ttc gga aac caa ctg gtt Met Glu Gly Cys Gly Lys Asn Ile Leu Phe Gly Asn Gln Leu Val 35 40 45	144
cag att cgt gtc aca aaa ggg gtc ccg ctt cca ttt gca ttt gat att Gln Ile Arg Val Thr Lys Gly Val Pro Leu Pro Phe Ala Phe Asp Ile 50 55 60	192
ctc tca cca gct ttc caa tac ggc aac cgt aca ttc acg aaa tac ccg Leu Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro 65 70 75 80	240
gag gat ata tca gac ttt ttt ata caa tca ttt cca gcg gga ttt gta Glu Asp Ile Ser Asp Phe Ile Gln Ser Phe Pro Ala Gly Phe Val 85 90 95	288
tac gaa aga acg ttg cgt tac gaa gat ggt gga ctg gtt gaa atc cgt Tyr Glu Arg Thr Leu Arg Tyr Glu Asp Gly Gly Leu Val Glu Ile Arg 100 105 110	336
tca gat ata aat tta atc gag gag atg ttt gtc tac aga gta gaa tat Ser Asp Ile Asn Leu Ile Glu Glu Met Phe Val Tyr Arg Val Glu Tyr 115 120 125	384
aaa ggt agt aac ttc ccg aat gat ggt cca gtg atg aag aag aca atc Lys Gly Ser Asn Phe Pro Asn Asp Gly Pro Val Met Lys Lys Thr Ile 130 135 140	432
aca gga tta caa cct tcg ttc gaa gtt gtg tat atg aac gat ggc gtc Thr Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val 145 150 155 160	480
ttg gtt ggc caa gtc att ctt gtt tat aga tta aac tct ggc aaa ttt Leu Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe 165 170 175	528
tat tcg tgt cac atg aga aca ctg atg aaa tca aag ggt gta gtg aag Tyr Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys 180 185 190	576
gat ttt ccc gaa tac cat ttc att caa cat cgt tta gag aag act gat Asp Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Asp 195 200 205	624
gtg gaa gac gga ggt ttt gtt gag caa cac gag acg gcc att gct caa Val Glu Asp Gly Gly Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln 210 215 220	672
ctg aca tcg ctg ggg aaa cca ctt gga tcc tta cac gaa tgg gtt taa Leu Thr Ser Leu Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val 225 230 235	720

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<211> 239

<212> PRT

<213> *Renilla reniformis*

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Met Val Ser Lys Gln Ile Leu Lys Asn Thr Gly Leu Gln Glu Ile Met
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Ser Phe Lys Val Asn Leu Glu Gly Val Val Asn Asn His Val Phe Thr
20 25 30

Met Glu Gly Cys Gly Lys Gly Asn Ile Leu Phe Gly Asn Gln Leu Val
35 40 45

Gln Ile Arg Val Thr Lys Gly Val Pro Leu Pro Phe Ala Phe Asp Ile
50 55 60

Leu Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro
65 70 75 80

Glu Asp Ile Ser Asp Phe Phe Ile Gln Ser Phe Pro Ala Gly Phe Val
85 90 95

Tyr Glu Arg Thr Leu Arg Tyr Glu Asp Gly Gly Leu Val Glu Ile Arg
100 105 110

Ser Asp Ile Asn Leu Ile Glu Glu Met Phe Val Tyr Arg Val Glu Tyr
115 120 125

Lys Gly Ser Asn Phe Pro Asn Asp Gly Pro Val Met Lys Lys Thr Ile
130 135 140

Thr Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val
145 150 155 160

Leu Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe
165 170 175

Tyr Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys
180 185 190

Asp Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Asp
195 200 205

Val Glu Asp Gly Gly Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln
210 215 220

Leu Thr Ser Leu Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val
225 230 235

<210> 3

<211> 720

<212> DNA

<213> Artificial

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<220>

<223> Humanized DNA

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<221> exon

<222> (1)..(720)

<223> open reading frame

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1				5					10					15			
144																	
96	agc	tcc	aag	gtg	aac	ctg	gag	ggc	gtg	gtg	aac	aac	cac	gtg	tcc	acc	
Ser	Phe	Lys	Val	Asn	Leu	Glu	Gly	Val	Val	Val	Asn	Asn	His	Val	Phe	Thr	
				20					25					30			
144	atg	gag	ggc	tgc	ggc	aag	ggc	aac	atc	ctg	tcc	ggc	aac	cag	ctg	gtg	
Met	Glu	Gly	Cys	Gly	Lys	Gly	Asn	Ile	Leu	Phe	Gly	Asn	Gln	Leu	Val		
						35			40			45					
192	cag	atc	cgc	gtg	acc	aag	ggc	gcc	ccc	ctg	ccc	tcc	gcc	tcc	gac	atc	
Gln	Ile	Arg	Val	Thr	Lys	Gly	Ala	Pro	Leu	Pro	Phe	Ala	Phe	Asp	Ile		
						50			55			60					
240	ctg	agc	ccc	gcc	tcc	cag	tac	ggc	aac	cgc	acc	tcc	acc	aag	tac	ccc	
Leu	Ser	Pro	Ala	Phe	Gln	Tyr	Gly	Asn	Arg	Thr	Phe	Thr	Lys	Tyr	Pro		
						65			70			75				80	
288	gag	gac	atc	agc	gac	tcc	tcc	atc	cag	agc	tcc	ccc	gcc	ggc	tcc	gtg	
Glu	Asp	Ile	Ser	Asp	Phe	Phe	Ile	Gln	Ser	Phe	Pro	Ala	Gly	Phe	Val		
						85			90					95			
336	tac	gag	cgc	acc	ctg	cgc	tac	gag	gac	ggc	ggc	ctg	gtg	gag	atc	cgc	
Tyr	Glu	Arg	Thr	Leu	Arg	Tyr	Glu	Asp	Gly	Gly	Leu	Val	Glu	Ile	Arg		
						100			105					110			
384	agc	gac	atc	aac	ctg	atc	gag	gag	atg	tcc	gtg	tac	cgc	gtg	gag	tac	
Ser	Asp	Ile	Asn	Leu	Ile	Glu	Glu	Met	Phe	Val	Tyr	Arg	Val	Glu	Tyr		
						115			120			125					
432	aag	ggc	cgc	aac	tcc	ccc	aac	gac	ggc	ccc	gtg	atg	aag	aag	acc	atc	
Lys	Gly	Arg	Asn	Phe	Pro	Asn	Asp	Gly	Pro	Val	Met	Lys	Lys	Thr	Ile		
						130			135			140					
480	acc	ggc	ctg	cag	ccc	agc	tcc	gag	gtg	gtg	tac	atg	aac	gac	ggc	gtg	
Thr	Gly	Leu	Gln	Pro	Ser	Phe	Glu	Val	Val	Tyr	Met	Asn	Asp	Gly	Val		
						145			150			155				160	
528	ctg	gtg	ggc	cag	gtg	atc	ctg	gtg	tac	cgc	ctg	aac	agc	ggc	aag	tcc	
Leu	Val	Gly	Gln	Val	Ile	Leu	Val	Tyr	Arg	Leu	Asn	Ser	Gly	Lys	Phe		
						165			170					175			
576	tac	agc	tgc	cac	atg	cgc	acc	ctg	atg	aag	agc	aag	ggc	gtg	gtg	aag	
Tyr	Ser	Cys	His	Met	Arg	Thr	Leu	Met	Lys	Ser	Lys	Gly	Val	Val	Lys		

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180

185

190

gac ttc ccc gag tac cac ttc atc cag cac cgc ctg gag aag acc tac 624
Asp Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr
195 200 205

gtg gag gac ggc ggc ttc gtg gag cag cac gag acc gcc atc gcc cag 672
Val Glu Asp Gly Gly Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln
210 215 220

ctg acc agc ctg ggc aag ccc ctg ggc agc ctg cac gag tgg gtg taa 720
Leu Thr Ser Leu Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val
225 230 235

<210> 4

<211> 239

<212> PRT

<213> Artificial

<220>

<223> Polypeptide coded by humanized DNA

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Met Val Ser Lys Gln Ile Leu Lys Asn Thr Gly Leu Gln Glu Ile Met
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Ser Phe Lys Val Asn Leu Glu Gly Val Val Asn Asn His Val Phe Thr
20 25 30

Met Glu Gly Cys Gly Lys Gly Asn Ile Leu Phe Gly Asn Gln Leu Val
35 40 45

Gln Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile
50 55 60

Leu Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro
65 70 75 80

Glu Asp Ile Ser Asp Phe Phe Ile Gln Ser Phe Pro Ala Gly Phe Val
85 90 95

Tyr Glu Arg Thr Leu Arg Tyr Glu Asp Gly Gly Leu Val Glu Ile Arg
100 105 110

Ser Asp Ile Asn Leu Ile Glu Glu Met Phe Val Tyr Arg Val Glu Tyr
115 120 125

Lys Gly Arg Asn Phe Pro Asn Asp Gly Pro Val Met Lys Lys Thr Ile
130 135 140

Thr Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val
145 150 155 160

Leu Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe
165 170 175

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Tyr Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys
180 185 190

Asp Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr
195 200 205

Val Glu Asp Gly Gly Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln
210 215 220

Leu Thr Ser Leu Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val
225 230 235

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<212> DNA

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<223> Synthetic primer

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<221> misc_feature

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<223> Synthetic primer

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44

<210> 6

<211> 38

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<213> Artificial

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<223> Synthetic primer

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<221> misc_feature

<222> (1)..(38)

<223> Synthetic primer

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<213> Renilla reniformis

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<222> (1)..(6)
<223> Chromophoric center

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